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United States Department of the Interior, J. A. Krug, Secretary
Fish and Wildlife Service, Albert M. Day, Director

Wildlife Leaflet 296

Chicago 54, Ill. * August 1947

COLLEGES AND UNIVERSITIES OFFERING COURSES IN WILDLIFE MANAGEMENT

1946-47

Compiled by Gustav Swanson and Lee E. Yeager
Section of Cooperative Wildlife Research Units
Division of Wildlife Research

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INTRODUCTION

During the last two decades many American colleges and universities have added to their curricula subject matter pertaining to the conservation and management of wildlife resources. Also during this period, wildlife management as a profession has been recognized, not only by educational institutions but by other professions, as by forestry, engineering, agriculture, law, and medicine.

The Fish and Wildlife Service and one of its predecessor agencies, the Bureau of Biological Survey, have received through every stage of this development hundreds of inquiries from people interested in taking college or other training that would fit them for employment in this new field. To answer such inquiries, the Bureau of Biological Survey issued in 1937 Wildlife Research and Management Leaflet BS-98, Colleges and Universities Offering Courses in Wildlife Management, 1937-38, in which were listed various schools, with a brief statement concerning the training offered by each. The present leaflet supersedes the 1937 compilation and contains such additions as seem pertinent to current needs.

Similar information in the fisheries field was recently summarized by H. G. Deason, Division of Fishery Biology, of this Service, in Fishery Leaflet 101, A Survey of Academic Qualifications for Fishery Biologists and of Institutional Facilities for Training Fishery Biologists.

Both of these leaflets may be obtained upon request addressed to Fish and Wildlife Service, Department of the Interior, Chicago 54, Illinois.

In the 1937 leaflet, 33 schools were listed as offering one or more courses in wildlife management. The present leaflet contains 37, indicating little increase in number. A very significant increase, however, was registered in the degree of attention that institutions now give this work. Such expansion is reflected in enlarged staffs, more and better laboratory facilities, acquisition of experimental areas, numerous cooperative working agreements with Federal and State agencies, and in other ways.

No attempt has been made thus far by any agency to rate or accredit institutions offering wildlife training, as is done by the Society of American Foresters for the schools in forestry. Such evaluation is neither the purpose of this leaflet nor the function of a Government agency. The information presented herein is as reported by each institution in response to a questionnaire, although allowance should be made for the difficulties in tabulating widely diversified data. In this leaflet, however, an attempt has been made to summarize the kinds of training offered by the various schools in the hope of aiding the prospective wildlife student to choose intelligently the one meeting his particular needs.

PREPARING FOR WILDLIFE WORK

It is impracticable to give here detailed information on the varied training required of, or useful to, wildlife workers. The following paragraphs merely outline broadly the kinds of knowledge generally recognized as most valuable in wildlife research, management, administration, teaching and extension, and wildlife photography.

Wildlife management, in its broad sense, is of interest to many American groups: (1) Those interested from the esthetic standpoint, deriving pleasure from observing the many forms in their natural habitat; (2) those who enjoy the pursuit of game species for sport and recreation; (3) those who profit financially from the sale of hunting rights, sporting goods, cameras, and binoculars; (4) trappers and those engaged in fur production, manufacture, and trade; (5) those concerned in the many enterprises incidentally connected with recreation and outdoor enjoyment; and (6) those engaged in professional wildlife work. The prospective student must judge where his interest lies in working with the wildlife resources of the country, which are intimately and necessarily associated with this varied combination of human relationships.

Research

Every branch of wildlife research requires a knowledge of the subject represented by basic and some advanced courses in zoology and botany. Specialized research requires still more advanced work, particularly in the branch in which the prospective employee is interested. The ideal to be attained is the best possible technical training broadened by practical experience under field and laboratory conditions.

Research on the many aspects of wildlife management -- census, physiology, habitat requirements and improvement, agricultural relationships, improved harvesting techniques, and others -- is very new but obviously demands wide knowledge of ecology and its application on aquatic and terrestrial areas as well as in plant and animal fields. These phases of wildlife research will undoubtedly see much development in the future. Workers should also be familiar with a wide range of scientific instruments and their use.

Research on the life history of birds and mammals requires the ability to identify a wide range of animals and plants, and a knowledge of the breeding, feeding, and nesting habits and the daily and seasonal movements of the species; predation, disease, and parasites; forestry and agriculture; soils; and the physical factors of the environment.

Food-habits research requires training in varied fields to enable the worker to recognize fragments of plants, seeds, mammals, birds, fishes, reptiles, amphibians, and invertebrates, in all stages of maturity. Knowledge of laboratory techniques is also necessary.

The physiological, nutritional, and hormone fields demand very specialized training and skills.

For research on control methods it is necessary that one be familiar with the life histories and habits of wildlife species that reach destructive abundance, and possess a knowledge of biochemistry, laboratory techniques and field methods designed to reduce populations economically, and the use of deterrents and preventives.

To develop practicable methods for the prevention and cure of animal maladies under natural conditions and on game and fur farms, persons engaged in wildlife-disease work must have a thorough knowledge of laboratory techniques and thorough training in diagnosis and the identification of endemic diseases, ectoparasites and endoparasites, tumors, and morbid tissues.

Wildlife-experiment stations and fur and game farms need personnel trained in wildlife production, with emphasis on the various factors affecting production. These include a knowledge of the principles of breeding, feeding, and management, as well as of diseases and their control.

In all cases, research workers must be able to recognize and interpret facts in their proper setting and perspective and to report them scientifically. The school chosen by the student should offer training commensurate with these requirements.

Administration

In the field of game management, the protection of favored species demands persons familiar with wildlife habitats, ranges, and economics. Such persons should also be familiar with the technique of law enforcement and should have a working knowledge of Federal and State laws and regulations. They must know how to locate, develop, and manage wildlife refuges. Persons charged with the control of species harmful to crops, livestock, forests, forage, and desirable wildlife must be familiar with the habits of the major species in the areas concerned and with control techniques.

Persons engaged in work concerned with wildlife in relation to forestry, soil conservation, flood control, reclamation, drainage, and grazing -- in fact, all phases of forest-wildlife, farm-wildlife, and aquatic-wildlife relationships -- should be trained in basic science and have a technical knowledge with which to interpret and apply known facts and a good background of animal and plant ecology. Some training in business administration and economics, silvicultural methods, forest administration, agriculture, animal husbandry, soils, dam construction, drainage, and navigation is desirable. The land administrator must be able to fit wildlife into a multiple land-use program.

Migratory-bird refuge administration requires persons familiar with life histories and habits of waterfowl, upland game birds, and fur animals; with aquatic vegetation suitable for food, cover, and nesting sites, and with techniques useful in improving them; and with the engineering phases of refuge management. Refuge managers must be informed on prospective laws and regulations and be trained in handling personnel and equipment.

Teaching and Extension

Students preparing to teach wildlife management and conservation need the basic training mentioned under research and administration. Effective teaching, since its function is to produce a continuous and ever-improved supply of trained wildlife workers, is one of the most vital branches in the still incompletely developed wildlife field. A broad technical background and wide experience in practical operations are necessary to men preparing for the wildlife-teaching profession.

Extension work is the readiest means available for acquainting the public with the principles of wildlife management and with methods of applying them. Extension work is probably the newest and the least developed phase of the wildlife program. It is desirable that the specialist imparting tested practices and techniques to persons interested in wildlife management should have an understanding of agricultural science and economics and of extension teaching methods, and should have had several years of practical experience in wildlife work.

Outdoor Writing

There are more than twenty million licensed fishermen, hunters, and trappers in the United States. A large percentage of these are regular readers of outdoor periodicals, books, and newspaper columns. The paid circulation of the several outdoor magazines averages about half a million. Additional millions find interest in occasional news stories or other copy on outdoor sports, recreation, and wildlife generally. Outdoor literature in one form or another reaches perhaps 1/3 of our total population, or 50 million people.

This interest in wildlife on the part of the public offers an unparalleled opportunity for conservation education and an opportunity for wildlife-trained men with the ability to write. The number who may thus find employment cannot be estimated, but every newspaper has a positive interest in outdoor copy. Outdoor magazines carry staffs of practical experts, mainly sportsmen-writers. Obviously, this field offers real opportunity for men with the proper combination of wildlife-journalistic training and who are capable of presenting sound scientific material in a popular manner.

Wildlife Photography

Wildlife photography is a small but rapidly developing field with fascinating opportunities. Here, mastery of photographic techniques is the first requirement, but acquaintance with wildlife, habitats, and ecological relationships is so obviously useful that wildlife photographers without it find themselves handicapped. Some wildlife training is particularly desirable to those using photography in connection with writing and lecturing.

TRAINING OFFERED

Academic training is prerequisite to practically every type of professional wildlife employment. This is due largely to the emphasis placed on the passing of a technical examination by which the candidate qualifies for a position on the roster of eligibles. Both Federal and State agencies usually select technical employees in this general manner, often through a civil service commission. Another reason is that the knowledge and skills required cannot be learned as well elsewhere.

The formal training now offered by American colleges and universities is briefly described in this leaflet.

Undergraduate

It is only on a thorough foundation in zoology, botany, and other related sciences that wildlife training can be effectively developed. It is therefore very important that the prospective wildlife worker obtain such a groundwork for his advanced training. Many institutions now offer the required preliminary courses in premedical or other curricula, so that they may be obtained at any school that offers standard first- and second-year work in zoology, botany, geology, agronomy, mathematics, physics, and chemistry, as well as the accompanying courses in social studies and humanities.

In table 1 only those schools that offer wildlife curricula are listed. Most schools offering the equivalent of a major or more in the wildlife field usually do so in the School of Forestry or Agriculture, but sometimes in the

Department of Zoology or some other unit, the resulting degree being the Bachelor of Forestry, Bachelor of Arts, Bachelor of Science, or similar degree. Few schools offer the bachelor's degree in Wildlife Management as such.

Schools in which wildlife training is restricted to elective courses offer them in the Department of Zoology, Forestry, Biology, or other department or unit.

Graduate

The graduate schools of colleges and universities offer students (1) advanced courses; (2) seminars; and (3) research problems seeking original data under the direction of experienced instructors. Included in this group are some of the largest and best known wildlife schools in the country. These are listed in tables 1, 2, and 3.

Although most schools with wildlife curricula offer both undergraduate and graduate work on the subject, a few give only graduate instruction. Among such are the University of Wisconsin and the University of Toronto.

With funds furnished from Federal appropriations and from cooperative funds provided by the Wildlife Management Institute, State conservation departments, and land-grant colleges, the Fish and Wildlife Service has established 10 Cooperative Wildlife Research Units regionally throughout the United States. One major object of these units is to provide specialized training in wildlife research and management, aided by a limited number of graduate fellowships, leading to advanced degrees. Graduate students are selected on the basis of high qualifications. These units are now located at the Alabama Polytechnic Institute, Iowa State College, University of Maine, University of Missouri, Ohio State University, Oregon State College, Pennsylvania State College, Texas A and M College, Utah State Agricultural College, and Virginia Polytechnic Institute.

Courses and Facilities

There is considerable similarity in the broad fields of training offered by institutions giving wildlife work, as indicated in table 2. These fields broken down into courses (not attempted in this leaflet) would naturally show variation in content, scope, and presentation. About half of the schools require a summer camp course, often in the School of Forestry. Other schools require field work under conditions more or less equivalent to those of a camp. A few of the larger schools offer summer work in both camp and biological station. Practically all have access to experimental or demonstration areas. Museum study specimens are available in most schools, although it is apparent that few have really comprehensive collections.

Variation in teaching staffs is shown in table 3. Most schools have staff members both in research and in teaching, in many cases through division of the duties of individual instructors. In most schools instructors outside the wildlife section or department, usually in the Division of Zoology, offer course work in mammalogy, ornithology, ichthyology, and related subjects

TABLE 1. -- Scope of training offered in the wildlife field by American Educational Institutions

INSTITUTION	Scope of training offered			
	Undergraduate		Graduate	
	Wildlife curriculum leading to bachelor's degree	Elective courses in Dept. of Zool., Biol., or Forestry	Master's	Ph.D
ALA. Polytech. Inst. 1/		X	X	
ARIZ., Univ. of		X	X	
CALIF., Univ. of (Berkeley)	X		X	X
CALIF., Univ. of (Davis)		X	X	X
COLO. A & M College	X		X	
CONN., Univ. of	X		X	
IDAHO, Univ. of		X	X	
ILL., Univ. of		X	X	X
IND., Purdue		X	X	
IOWA State College 1/	X		X	X
KANSAS, Univ. of	X	X	X	X
LA. State Univ	X	X	X	
MAINE, Univ. of 1/	X		X	
MASS., Univ. of	X	X	X	
MICH. State College	X		X	X
MICH., Univ. of	X		X	X
MINN., Univ. of	X		X	X
MO., Univ. of 1/	X		X	X
MONT. State College		X	X	
MONT. State Univ.		X		
N. H., Univ. of		X	X	
N. Y., Cornell Univ.	X	X	X	X
N. Y., Syracuse Univ.	X		X	X
N. C. State College		X		
OHIO State Univ. 1/	X	X	X	X
OKLA. A & M College	X		X	
OREG. State College 1/	X		X	X
PA. State College 1/		X	X	X
S. DAK. State College	X	X		
TEXAS A & M College 1/	X		X	X
UTAH State Agr. College 1/	X		X	
VA. Polytechnic Inst. 1/	X	X	X	X
WASH. State College	X		X	X
WIS., Univ. of			X	X
WYO., Univ. of	X	X	X	
BRIT. COL., Univ. of		X	X	
TORONTO, Univ. of			X	X

1/ Cooperative Wildlife Research Units.

(table 3). This arrangement, by which one division supplements the work of another, provides a broader and hence more satisfactory training.

In table 3 the number of students graduated and professionally employed during the period 1936 to 1946 is given; from these data the percentage of those entering professional work may be determined.

Relatively few schools have staff members concerned with extension work, despite the great need for this type of work.

EMPLOYMENT OPPORTUNITIES

There is a limited demand for persons trained in wildlife subjects in such Federal agencies as the Fish and Wildlife Service, the Forest Service, the National Park Service, the Indian Service, Soil Conservation Service, and during recent years, the Corps of Engineers, United States Army. Practically all State fish and game departments now employ, in administrative, management or research capacities, small to large staffs of men with such technical training. All the 37 schools listed as offering wildlife curricula necessarily employ instructors with wildlife training and, in nearly all cases, those with practical experience as well. These and other institutions conduct wildlife research requiring highly trained specialists. During recent years, private interests have absorbed a small number of men trained in wildlife matters, mostly in large waterfowl or other hunting clubs and on estates and in a few industrial laboratories. Commercial interests concerned with wildlife, such as fur establishments and fisheries, offer employment to a limited number of specially qualified persons.

Neither the trend in wildlife employment nor the possibility of expansion can be predicted with certainty. There is vastly more to be done in both the fish and the wildlife fields than can be done by the present wildlife workers, even when all students now in school are absorbed. There is great need for improvement and expansion of wildlife programs among Federal agencies and in the State fish and game departments. Obviously, expansion in the colleges and universities is understandably limited by the over-all demand for trained men. Private employment in wildlife work, now in its infancy, should grow, with possibilities virtually unlimited. The outdoor writing profession now manned mostly by sportsmen -- writers, offers a large and important field for persons trained in both wildlife matters and journalism. Wildlife photography is a new and growing profession.

The number of trained persons at present engaged in wildlife work in all its branches is estimated to be from 2,000 to 3,000. In Federal, State, and private agencies there is plenty of room for expansion and greater development in all the phases of this work -- administration, research, conservation, wildlife management, control, law enforcement, outdoor photography, outdoor writing and others. On the basis of potential development, it is easy to visualize a future wildlife program on this continent requiring the services of 10,000 trained men and women.

For an analysis of employment possibilities the reader is referred to the papers by Rutherford, Turner, VanDersal, and Wing, listed in the bibliography.

TABLE 2. — Courses related to wildlife management offered by American educational institutions

INSTITUTION	Courses in —																			
	Agronomy	Botany, Syst. Elem.	Botany, Syst. Adv.	Dendrology	Ecology, Animal	Ecology, Plant	Forestry, General	Geology	Horticulture	Ichthyology	Limnology	Mammalogy	Ornithology	Parasitology	Physiology, Animal	Range Management	Silvics & Silviculture	Soils	Zoology, Invertebrate	Other
ALA. Polytech. Inst.	x	x	x	x	..	x	x	x	x	x	x	x	x	x	..	..	x	x	x	..
ARIZ., Univ. of	..	x	x	..	x	x	..	x	..	..	..	x	x	x	x	x	..	x	x	..
CALIF., Univ. of (Berkeley)	x	x	x	x	x	x	x	x	..	..	..	x	x	x	x	x	x	x	x	..
CALIF., Univ. of (Davis)	x	x	..	..	..	..	..	x	x	..	..	..	..	x	x	..	..	x	..	..
COLO., A & M College	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	..
CONN., Univ. of	x	x	x	x	x	..	x	x	x	..	x	x	x	x	x	..	x	x	x	..
IDAHO, Univ. of	x	x	x	x	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..
ILL., Univ. of	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	1/	x	x	..
IND., Purdue	x	x	x	x	x	..	x	x	x	..	..	..	..	x	x	..	x	x	x	..
IOWA State College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
KANSAS, Univ. of	..	x	x	x	x	x	..	x	..	x	x	x	x	x	x	..	..	..	x	..
LA. State Univ.	x	x	x	x	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..
MAINE, Univ. of	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	..	x	x	x	..
MASS., Univ. of	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	..	x	x	x	..
MICH. State College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MICH. Univ. of	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
MINN., Univ. of	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
MO., Univ. of	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x
MONT. State College	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	x	..	x	x	..
MONT. State Univ.	.	x	x	x	x	x	x	x	..	1/	1/	x	x	x	x	x	x	..	x	..
N. H. Univ. of	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	..
N. Y., Cornell Univ.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..	..	x	x	x
N. Y., Syracuse Univ.	..	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	..
N. C. State College	No information available																			
OHIO State Univ.	x	x	x	..	x	x	x	x	x	1/	1/	1/	x	x	x	..	x	x	x	..
OKLA. A & M College	x	x	x	.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
OREG. State College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
PA. State College	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x
S. DAK. State College	x	x	x	x	x	..	x	x	x	x	..	x	x	x	x	..	..	x	x	x
TEXAS A & M College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x
UTAH State Agr. College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
VA. Polytech. Inst.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
WASH. State College	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	..
WIS., Univ. of	x	x	x	x	x	x	..	x	x	x	x	1/	1/	x	x	..	x	x	x	..
WYO., Univ. of	x	x	x	..	x	x	x	x	..	x	x	x	x	x	x	x	..	x	x	..
BRIT. COL., Univ. of	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x
TORONTO, Univ. of	..	x	..	x	x	x	x	x	..	x	x	..	..	x	x	..	x	x	x	..

1/ In other school, on other campus, or planned.

ADDRESSES OF COLLEGES AND UNIVERSITIES

In requesting information or when making application for admission to any of the colleges or universities listed in this publication, the prospective students should use the addresses as here given:

Alabama	Department of Zoology and Entomology Alabama Polytechnic Institute Auburn, Alabama
Arizona	University of Arizona Tucson, Arizona
California (Berkeley)	University of California Department of Zoology Berkeley, California
California (Davis)	University of California Division of Zoology Davis, California
Colorado	Colorado A & M College Department of Forest Recreation and Game Management Fort Collins, Colorado
Connecticut	University of Connecticut Department of Forestry and Wildlife Management Storrs, Connecticut
Idaho	University of Idaho School of Forestry Moscow, Idaho
Illinois	University of Illinois Vivarium Building Wright and Healey Champaign, Illinois
Indiana	Purdue University Department of Forestry Lafayette, Indiana
Iowa	Department of Zoology and Entomology Division of Science Iowa State College Ames, Iowa
Kansas	University of Kansas Department of Zoology Lawrence, Kansas

Louisiana	Louisiana State University College of Agriculture Baton Rouge, Louisiana
Maine	University of Maine Department of Forestry Orono, Maine
Massachusetts	University of Massachusetts Forestry Department Amherst, Massachusetts
Michigan	Michigan State College Zoology Department East Lansing, Michigan
	University of Michigan School of Forestry and Conservation Ann Arbor, Michigan
Minnesota	University of Minnesota Division of Entomology and Economic Zoology University Farm St. Paul 1, Minnesota
Missouri	University of Missouri College of Arts and Science Department of Zoology Columbia, Missouri
Montana	Montana State University Division of Biological Sciences Missoula, Montana
	Montana State College Department of Zoology and Entomology Bozeman, Montana
New Hampshire	University of New Hampshire Department of Forestry Durham, New Hampshire
New York	Cornell University Ithaca, New York
	Syracuse University Department of Forest Zoology Syracuse, New York

North Carolina	North Carolina State College School of Agriculture and Forestry Raleigh, North Carolina
Ohio	Ohio State University College of Agriculture Department of Zoology and Entomology Columbus, Ohio
Oklahoma	Oklahoma Agricultural and Mechanical College Department of Zoology Stillwater, Oklahoma
Oregon	Oregon State College Department of Fish and Game Management 201 Agricultural Engineering Building Corvallis, Oregon
Pennsylvania	Pennsylvania State College 206 Forestry Building State College, Pennsylvania
South Dakota	South Dakota State College Entomology-Zoology Department Brookings, South Dakota
Texas	Agricultural and Mechanical College of Texas Department of Fish and Game College Station, Texas
Utah	Utah State Agricultural College School of Forestry, Range, and Game Management Logan, Utah
Virginia	Department of Biology Virginia Polytechnic Institute Blacksburg, Virginia
Washington	State College of Washington Division of Wildlife Management Pullman, Washington
Wisconsin	University of Wisconsin Department of Wildlife Management Madison, Wisconsin
Wyoming	University of Wyoming Department of Zoology and Physiology Agricultural Building Laramie, Wyoming

British Columbia	University of British Columbia Department of Zoology Vancouver, British Columbia, Canada
Toronto	University of Toronto Department of Zoology Toronto 5, Ontario, Canada

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TABLE 3. -- Staffs, students, and facilities in the wildlife field, American educational institutions, 1945-46, or dates indicated

INSTITUTIONS	Staff members engaged directly in wildlife management and conservation												Additional staff members engaged in ornithology, mammalogy, econ. zoology, etc.										Number of men in wildlife extension work. (man-year basis)	Capacity for graduate students	Wildlife graduates, 1936-46						Field stations	Experimental demonstration areas		Museum study specimens available in wildlife department				
	Number of men		Number of men (1/)										Number of men (1/)															Employed in wildlife field										
	Full time	Part time	Research					Teaching					Research					Teaching							Bachelors	Masters	PhD.	Bachelors	Masters	PhD.	(2/)	No. of Tracts	Acres	Mammals	Birds	Reptiles	Amphibians	Fishes
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5																
ALA. Polytech. Inst.	2	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	6	...	10	...	...	9	...	*	1	1,400	400	1,000	150	50	4,000
ARIZ., Univ. of	...	...	...	...	...	...	...	...	...	...	...	1/3	...	...	...	...	1/3	...	...	...	...	1/3	None	...	5	2	...	4	1	...	...	2	100,000	1,000	3000	300	50	200
CALIF., Univ. of (Berkeley)	2	3	1	...	1½	...	...	1/2	...	1/2	...	...	1	1	1/2	...	1/2	1	1/2	1/2	...	1/2	None	10	10	10	2	...	9	2	...	1	16,000	102,000	93,000	30,000	10,000	...
CALIF., Univ. of (Davis)	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1/4	...	...	...	...	1/4	None	3	...	...	...	...	...	...	...	1	...	1,000	1,000	1,500	1,500	Few
COLO. A & M College	1	3	1/2	...	...	1/2	1	1/2	...	...	1/2	1	...	...	1	1	1/2	...	...	1	1	1/2	None	6	18	2	...	18	2	...	*	6	2,000,000	2,000	750	Few	Few	Few
CONN., Univ. of	1	...	...	1/4	...	...	...	...	3/4	...	...	...	...	...	1/4	...	...	...	...	1/4	3/4	1/4	None	4	12	6	...	10	6	...	...	3	11,300	100	100	5	5	100
IDAHO, Univ. of	...	1	...	1/2	...	...	...	...	1/2	...	...	...	...	...	...	...	...	...	...	1/3	...	...	None	3	...	...	...	6	1	...	*	2	8,415	25	75	...	4	...
ILL., Univ. of	3	3	...	1/4	1	1/2	1	1/2	1/4	1	1/2	...	...	...	...	...	...	...	...	...	...	...	None	15	130	42	11	13	16	11	...	4	1,500	300	2000	400	200	200
IND., Purdue	2	...	...	...	1/2	1	...	...	...	1/2	...	...	...	...	...	...	...	...	...	...	...	...	None	4	9	...	...	9	...	...	*	2	142	300	200	...	...	...
IOWA State College	3	11	8	...	1/2	1¼	1/2	...	...	...	1¼	1/4	...	...	...	...	...	...	...	...	...	...	1	24	32	20	11	28	20	11	*	5	940	1,000	1,700	800	500	1,500
KANSAS, Univ. of	...	3	1/2	...	...	1/2	1/2	1/2	...	...	1/2	1/2	...	1/2	...	1/2	1/2	...	1/2	...	1/2	1/2	1	30	3	1	1	2	1	...	x	2	1,300	20,000	25,000	15,000	16,000	8,000
LA. State Univ.	...	2	...	...	1/4	...	1/4	...	...	1/4	...	3/4	...	...	1/2	...	...	...	...	1/2	1	1/4	None	20	None (3/)		...	...	...	...	x	1	1,100	Several thousand		- - -	- - -	- - -
MAINE, Univ. of	6	3	2	1/2	2	...	1/4	2	1/2	1/2	...	1/4	...	...	...	...	...	...	...	1½	...	...	None	8	42	13	...	22	11	...	x	1	2,000	200	1,325	35	40	117
MASS., Univ. of	1	3	1/2	1	1/4	...	1/4	1/2	3/4	3/4	...	3/4	...	...	2	...	1/4	...	2	...	...	3/4	None	5	15	5	...	...	4	...	...	3	10,965	200	500	50	50	100
MICH. State College	5	2	...	...	3/4	1	...	...	...	2¼	1½	1/2	...	...	1	1/2	1/4	...	...	...	1/2	3/4	1 1/4	Ab.18	52	8	4	30	2	4	x	5	6,823	550	2,000	300	150	5000
MICH., Univ. of	2	2	1	...	...	1/3	1/2	3	...	...	2/3	1½	...	...	2	1	1½	...	...	...	...	1/2	None	40	62	54	7	53	49	7	x	6	26,000	370	500	30	40	95
MINN., Univ. of	2	2	1/2	...	...	1	...	1/2	1/2	...	1	...	...	...	...	1/2	1/2	...	...	...	1/2	1/2	None	10	87	10	1	37	10	3	x	3	35,500	1,500	300	...	...	...
MO., Univ. of	4	...	1	...	...	2	1/2	1	...	...	2/3	1/6	...	...	...	...	...	...	...	...	5/6	1/3	1/6	16	25	20	...	10	19	0	x	1	2,220	700	1,200	125	100	30,000
MONT. State College	...	2	...	...	...	1/3	...	...	...	...	2/3	1/6	...	...	...	...	...	...	...	...	1/3	1/3	None	4	6	2	...	...	1	...	...	2	7,000	300	50	50	25	25
MONT. State Univ.	...	3	...	...	...	...	...	...	...	1/3	1/3	1/2	...	...	...	...	...	...	...	1/6	...	...	None	None	25	...	...	18	...	...	...	2	21,160	200	1,000	25	25	50
N. H., Univ. of	...	2	...	...	...	...	...	...	...	...	...	1/4	1/2	...	...	1/2	1	1/2	...	...	1/2	1	1/4	10	8	5		8	4	...	x	2	1,160	480	350	75	125	800
N. Y., Cornell Univ.	1	12	1	1	1	1/2	1	1	1	1	1/2	1	1	1/2	1½	1	2	1	1/2	1½	1	1½	1 1/4	30	70	25	25	35	20	22	...	6	6,282	3,000	20,000	5,000	3,000	5,000
N. Y., Syracuse Univ.	6	4-6	3-4	1	1/2	[illegible]	[illegible]	1-2	1/2	1/2	1/2	1/4	1-3	1/2	1/2	...	1/4	...	...	1/2	...	1/4	1	8	39	8	...	17	8	...	x	1	15,000	2,000	1,500	200	800	50,000
N. C. State College	No information available																																					
OHIO State Univ.	3	2	5	...	1	1/4	...	...	1/4	...	1½	1	1	1/3	1/4	1/4	1/4	1	1/3	3/4	3/4	1½	None	10-12	30	12	4	15	12	3	x	4	738	850	550	25	available	- -
OKLA. A & M College	1	1	...	1/2	1/4	1/2	...	...	...	...	1/2	...	...	...	1/4	...	...	...	1/4	...	...	...	1/4	10	...	...	...	...	...	...	...	1	21,000	450	500	600	1,000	2000
OREG. State College	4	2	1	...	...	...	1¼	...	1	1	...	3/4	...	...	...	...	...	...	...	...	...	...	None	10	135	17	1	115	17	1	*	3	5,025	1,000	1,500	20	...	3000
[illegible]. State College	2	11	8-10	...	1	1/2	2	...	...	1	1/2	1½	...	...	3½	1/2	1/2	...	...	4	1/2	1/2	1	15-20	...	14	1	...	8	1	*	4	11,000	532	1,489	40	30	150
S. DAK. State College	...	1	...	...	...	...	...	...	...	...	1/2	...	...	...	1	...	...	...	...	1	...	...	None	None	6	...	2	...	...	...	...	...	...	50	500	25	25	500
TEXAS A & M College	3	...	3	...	1/2	1¼	1	...	...	...	1/2	3/4	...	...	...	...	...	...	...	...	...	...	1	15-20	42	15	...	23	12	0	*	...	...	4,000	4,500	2,000	1,500	20,000
UTAH State Agr. College	2	...	...	...	1/3	1/3	...	...	...	2/3	2/3	...	...	...	...	1/2	1/2	2	1/2	1	1½	1½	None	12	79	10	...	59	8	0	x	8	53,740	40	60	5	5	30
VA. Polytech. Inst.	4	4	...	...	...	1⅓	1/2	...	...	1	1⅓	1	...	...	...	1	...	...	...	...	1½	1/2	1/3	12	29	17	...	10	14	...	*	2	2,025	700	700	15	25	50
WASH. State College	3	3	2	...	...	...	...	1	2	1	...	...	...	...	...	...	...	1/2	...	1	...	...	None	...	61	5	...	43	5	...	*	2	18,200	1,500	2,000	500	250	350
WIS., Univ. of	2	1	5	3/4	...	...	3/4	...	1/4	...	...	1/4	...	...	...	...	...	...	...	1	...	...	None	10	...	11	3	...	11	3	x	3	7,000	200	200	...	...	...
WYO., Univ. of	1	2	...	1/2	1/2	...	1/2	...	...	1/2	...	...	1/2	...	1	...	...	...	...	1/2	...	...	None	10	7	5	...	4	3	...	...	4	89,190	100	1,500	500	500	400
BRIT. COL., Univ. of	...	3	1½	...	...	...	1/2	...	...	...	...	1/2	...	...	...	...	1/2	...	...	...	...	...	None	6	1	2	...	...	2	...	...	...	...	2200	1,000	350	350	2500
TORONTO, Univ. of	...	2	1	...	...	...	...	...	...	...	...	2¼	...	...	...	...	...	...	...	...	...	...	None	6	...	...	3	...	...	3	...	1	24,000	...	...	...	...	...

1/ Man-year is unit. 1= assistant, 2= instructor, 3= asst. professor, 4= assoc. professor, 5= professor.
2/ x= maintains field station; *= summer camp in forestry school, field, and biological station, residence on area or equivalent.
3/ Five forestry graduates in wildlife employ.

U. S. DEPARTMENT OF AGRICULTURE
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RECORD